IN THE CLAIMS:

Please cancel claims 1-69.

Please add claims 70-209 as follows:

--70. (New) A micro-machine switch electrically connecting a first signal line formed on a substrate to a second signal line or electrically disconnecting said first signal line from said second signal line, said second signal line being formed on said substrate and having an end spaced away from an end of said first signal line by a certain gap,

said micro-machine switch comprising:

a supporter formed on said substrate and having a predetermined height relative to a surface of said substrate;

a flexible beam projecting from said supporter in parallel with a surface of said substrate, and having a distal end facing said gap;

a contact electrode formed on a surface of said beam facing said substrate such that said contact electrode faces said gap;

a lower electrode formed on said substrate in facing relation with a part of said beam; and

an intermediate electrode formed on said beam in facing relation with said lower electrode.

71. (New) The micro-machine switch as set forth in claim 70, wherein said supporter and at least a part of said beam are composed of the same electrically conductive material and are formed integrally with each other.

72. (New) The micro-machine switch as set forth in claim 70, wherein said beam is comprised of an electrical conductor extending from said supporter and having such a length that said electrical conductor faces said lower electrode, and an electrical insulator extending from a distal end of said electrical conductor and having such a length that said electrical insulator faces said gap,

said contact electrode being formed on said electrical insulator in facing relation with said gap.

73. (New) The micro-machine switch as set forth in claim 70, wherein said electrical conductors define at least two cantilevers.

74. (New) The micro-machine switch as set forth in claim 70, wherein said beam further includes an upper electrode formed integrally with said electrical conductor on said electrical insulator.

75. (New) The micro-machine switch as set forth in claim 74, wherein said upper electrode extends across said intermediate electrode and said contact electrode.

76. (New) The micro-machine switch as set forth in claim 74, wherein said upper electrode and said electrical insulator are formed with a through-hole which passes through said upper electrode and said electrical insulator in alignment with said lower electrode.

77. (New) The micro-machine switch as set forth in claim 74, wherein said upper electrode, said electrical insulator and said contact electrode are formed with a through-hole which passes through said upper electrode, said electrical insulator and said contact electrode.

78. (New) The micro-machine switch as set forth in claim 70, wherein said upper electrode has a greater thickness than a thickness of said electrical insulator.

79. (New) The micro-machine switch as set forth in claim 70, wherein said supporter has a floating potential.

80. (New) The micro-machine switch as set forth in claim 70, further comprising at least one second supporter formed on said substrate, and having a predetermined height relative to a surface of said substrate, said second supporter being connected to said beam through at least one arm projecting from said second supporter in parallel with a surface of said substrate.

81. (New) The micro-machine switch as set forth in claim 80, further comprising:

a second lower electrode formed on said substrate in facing relation with a part of said beam; and

a second intermediate electrode formed on said beam in facing relation with said second lower electrode.

82. (New) The micro-machine switch as set forth in claim 70, wherein said lower electrode is formed on said substrate between said supporter and said gap.

83. (New) The micro-machine switch as set forth in claim 72, wherein said electrical conductor is composed of semiconductor.

84. (New) The micro-machine switch as set forth in claim 74, wherein said semiconductor is single crystal semiconductor.

85. (New) The micro-machine switch as set forth in claim 83, wherein said semiconductor is one of amorphous semiconductor and polycrystal semiconductor.

86. (New) The micro-machine switch as set forth in claim 70, wherein a surface of said supporter and a surface of said beam form an obtuse angle.

87. (New) The micro-machine switch as set forth in claim 70, wherein said intermediate electrode has a thickness smaller than a thickness of said contact electrode.

88. (New) The micro-machine switch as set forth in claim 70, wherein at least one of said contact electrode and said first and second signal lines is covered with an insulating film which will make capacity connection.

89. (New) The micro-machine switch as set forth in claim 70, wherein said substrate is one of a glass substrate and a ceramic substrate.

90. (New) The micro-machine switch as set forth in claim 70, wherein said substrate is a gallium-arsenide (GaAs) substrate.

91. (New) The micro-machine switch as set forth in claim 70, wherein said intermediate electrode is electrically connected to said upper electrode, and said upper electrode is in an electrically floating condition.

92. (New) The micro-machine switch as set forth in claim 70, wherein said lower electrode is comprised of a plurality of electrodes each having the same area by which each of said electrodes faces said upper electrode.

93. (New) The micro-machine switch as set forth in claim 70, wherein said upper electrode is comprised of a plurality of electrodes each having the same area by which each of said electrodes faces said lower electrode.

94. (New) The micro-machine switch as set forth in claim 70, wherein said lower electrode is comprised of a plurality of electrodes each having the same area by which each of said electrodes faces said upper electrode, and said upper electrode is comprised of a plurality of electrodes each

having the same area by which each of said electrodes faces said lower electrode.

95. (New) The micro-machine switch as set forth in claim 92, wherein each of said upper and lower electrodes comprised of a plurality of said electrodes defines a comb-shaped electrode.

96. (New) The micro-machine switch as set forth in claim 70, wherein said supporter and said beam are covered at their surfaces with an insulating film.

97. (New) The micro-machine switch as set forth in claim 70, wherein said beam is composed of silicon, and said insulating film is comprised of a film formed due to oxidation of a surface of said beam.

98. (New) The micro-machine switch as set forth in claim 70, wherein a thickness of said insulating film on an upper surface of said beam is equal to a thickness of said insulating film on a lower surface of said beam.

99. (New) The micro-machine switch as set forth in claim 70, wherein said beam has a super-lattice structure

having a multi-layered structure composed of two or more materials.

100. (New) A micro-machine switch electrically connecting a first signal line formed on a substrate to a second signal line or electrically disconnecting said first signal line from said second signal line, said second signal line being formed on said substrate and having an end spaced away from an end of said first signal line by a certain gap,

said micro-machine switch comprising:

a supporter formed on said substrate and having a predetermined height relative to a surface of said substrate;

a flexible beam projecting from said supporter in parallel with a surface of said substrate, and having a distal end facing said gap;

an electrical insulator making contact with a lower surface of said beam, and extending from said beam in a direction in which said beam extends;

a contact electrode formed on a surface of said electrical insulator facing said substrate such that said contact electrode faces said gap;

a lower electrode formed on said substrate in facing relation with a part of said beam;

an intermediate electrode formed on said electrical insulator in facing relation with said lower electrode; and

a reinforcement formed on said electrical insulator at a side opposite to said contact electrode in alignment with said contact electrode.

101. (New) The micro-machine switch as set forth in claim 100, wherein said reinforcement is composed of silicon.

102. (New) The micro-machine switch as set forth in claim 100, wherein said supporter and at least a part of said beam are composed of the same electrically conductive material and are formed integrally with each other.

103. (New) The micro-machine switch as set forth in claim 100, wherein said beam includes at least two cantilevers.

104. (New) The micro-machine switch as set forth in claim 100, wherein said beam further includes an upper electrode formed integrally therewith on said electrical insulator.

105. (New) The micro-machine switch as set forth in claim 104, wherein said upper electrode and said electrical insulator are formed with a through-hole which passes through said upper electrode and said electrical insulator in alignment with said lower electrode.

106. (New) The micro-machine switch as set forth in claim 100, wherein said reinforcement, said electrical insulator and said contact electrode are formed with a through-hole which passes through said upper electrode, said electrical insulator and said contact electrode.

107. (New) The micro-machine switch as set forth in claim 100, further comprising at least one second supporter formed on said substrate, and having a predetermined height relative to a surface of said substrate, said second supporter being connected at its lower surface to said electrical insulator through a second beam projecting from said second supporter in parallel with a surface of said substrate.

108. (New) The micro-machine switch as set forth in claim 107, further comprising:

a second lower electrode formed on said substrate in facing relation with a part of said second beam; and

a second intermediate electrode formed on said electrical insulator in facing relation with said second lower electrode.

109. (New) The micro-machine switch as set forth in claim 100, wherein said lower electrode is formed on said substrate between said supporter and said gap.

110. (New) The micro-machine switch as set forth in claim 100, wherein a surface of said supporter and a surface of said beam form an obtuse angle.

111. (New) The micro-machine switch as set forth in claim 100, wherein said intermediate electrode has a thickness smaller than a thickness of said contact electrode.

112. (New) The micro-machine switch as set forth in claim 100, wherein at least one of said contact electrode and said first and second signal lines is covered with an insulating film which will make capacity connection.

113. (New) The micro-machine switch as set forth in claim 100, wherein said substrate is one of a glass substrate and a ceramic substrate.

114. (New) The micro-machine switch as set forth in claim 100, wherein said substrate is a gallium-arsenide (GaAs) substrate.

115. (New) The micro-machine switch as set forth in claim 100, wherein said intermediate electrode is electrically connected to said upper electrode, and said upper electrode is in an electrically floating condition.

116. (New) The micro-machine switch as set forth in claim 100, wherein said lower electrode is comprised of a plurality of electrodes each having the same area by which each of said electrodes faces said upper electrode.

117. (New) The micro-machine switch as set forth in claim 100, wherein said upper electrode is comprised of a plurality of electrodes each having the same area by which each of said electrodes faces said lower electrode.

118. (New) The micro-machine switch as set forth in claim 100, wherein said lower electrode is comprised of a plurality of electrodes each having the same area by which each of said electrodes faces said upper electrode, and said

upper electrode is comprised of a plurality of electrodes each having the same area by which each of said electrodes faces said lower electrode.

119. (New) The micro-machine switch as set forth in claim 116, wherein each of said upper and lower electrodes comprised of a plurality of said electrodes defines a comb-shaped electrode.

120. (New) The micro-machine switch as set forth in claim 100, wherein said supporter and said beam are covered at their surfaces with an insulating film.

121. (New) The micro-machine switch as set forth in claim 100, wherein said beam is composed of silicon, and said insulating film is comprised of a film formed due to oxidation of a surface of said beam.

122. (New) The micro-machine switch as set forth in claim 100, wherein a thickness of said insulating film on an upper surface of said beam is equal to a thickness of said insulating film on a lower surface of said beam.

123. (New) The micro-machine switch as set forth in claim 100, wherein said beam has a super-lattice structure having a multi-layered structure composed of two or more materials.

124. (New) A micro-machine switch electrically connecting a first signal line formed on a substrate to a second signal line or electrically disconnecting said first signal line from said second signal line, said second signal line being formed on said substrate and having an end spaced away from an end of said first signal line by a certain gap,

said micro-machine switch comprising:

a supporter formed on said substrate and having a predetermined height relative to a surface of said substrate;

a flexible beam projecting from said supporter in parallel with a surface of said substrate, and having a distal end facing said gap;

a first electrical insulator having a bottom in a plane in which a bottom of said beam exists, and extending from said beam in a direction in which said beam extends;

a contact electrode formed on a surface of said first electrical insulator facing said substrate such that said contact electrode faces said gap;

a lower electrode formed on said substrate in facing relation with a part of said beam;

an intermediate electrode formed on said beam in facing relation with said lower electrode; and

a reinforcement formed on said first electrical insulator at a side opposite to said contact electrode in alignment with said contact electrode.

125. (New) The micro-machine switch as set forth in claim 124, wherein said first electrical insulator and said beam are composed of the same semiconductor.

126. (New) The micro-machine switch as set forth in claim 124, wherein said first electrical insulator has a resistance higher than a resistance of said supporter and said beam.

127. (New) The micro-machine switch as set forth in claim 124, further comprising a second electrical insulator formed on a lower surface of said beam in facing relation with said lower electrode, and wherein said intermediate electrode is formed on a lower surface of said second electrical insulator.

128. (New) The micro-machine switch as set forth in claim 127, wherein said second electrical insulator has a thickness smaller than a thickness of said contact electrode.

129. (New) The micro-machine switch as set forth in claim 124, further comprising at least one second supporter formed on said substrate, and having a predetermined height relative to a surface of said substrate, said second supporter being connected to said first electrical insulator through a second beam projecting from said second supporter in parallel with a surface of said substrate.

130. (New) The micro-machine switch as set forth in claim 129, further comprising:

a second lower electrode formed on said substrate in facing relation with a part of said second beam; and

a second intermediate electrode formed on said second beam in facing relation with said second lower electrode.

131. (New) The micro-machine switch as set forth in claim 130, further comprising a third electrical insulator formed on a lower surface of said second beam in facing relation with said second lower electrode, and wherein said

second intermediate electrode is formed on a lower surface of said third electrical insulator.

132. (New) The micro-machine switch as set forth in claim 124, wherein said lower electrode is formed on said substrate between said supporter and said gap.

133. (New) The micro-machine switch as set forth in claim 124, wherein a surface of said supporter and a surface of said beam form an obtuse angle.

134. (New) The micro-machine switch as set forth in claim 124, wherein said intermediate electrode has a thickness smaller than a thickness of said contact electrode.

135. (New) The micro-machine switch as set forth in claim 124, wherein at least one of said contact electrode and said first and second signal lines is covered with an insulating film which will make capacity connection.

136. (New) The micro-machine switch as set forth in claim 124, wherein said substrate is one of a glass substrate and a ceramic substrate.

137. (New) The micro-machine switch as set forth in claim 124, wherein said substrate is a gallium-arsenide (GaAs) substrate.

138. (New) The micro-machine switch as set forth in claim 124, wherein said intermediate electrode is electrically connected to said upper electrode, and said upper electrode is in an electrically floating condition.

139. (New) The micro-machine switch as set forth in claim 124, wherein said lower electrode is comprised of a plurality of electrodes each having the same area by which each of said electrodes faces said upper electrode.

140. (New) The micro-machine switch as set forth in claim 124, wherein said upper electrode is comprised of a plurality of electrodes each having the same area by which each of said electrodes faces said lower electrode.

141. (New) The micro-machine switch as set forth in claim 124, wherein said lower electrode is comprised of a plurality of electrodes each having the same area by which each of said electrodes faces said upper electrode, and said upper electrode is comprised of a plurality of electrodes each

having the same area by which each of said electrodes faces said lower electrode.

142. (New) The micro-machine switch as set forth in claim 139, wherein each of said upper and lower electrodes comprised of a plurality of said electrodes defines a comb-shaped electrode.

143. (New) The micro-machine switch as set forth in claim 124, wherein said supporter and said beam are covered at their surfaces with an insulating film.

144. (New) The micro-machine switch as set forth in claim 124, wherein said beam is composed of silicon, and said insulating film is comprised of a film formed due to oxidation of a surface of said beam.

145. (New) The micro-machine switch as set forth in claim 124, wherein a thickness of said insulating film on an upper surface of said beam is equal to a thickness of said insulating film on a lower surface of said beam.

146. (New) The micro-machine switch as set forth in claim 124, wherein said beam has a super-lattice structure

having a multi-layered structure composed of two or more materials.

147. (New) A micro-machine switch electrically connecting a first signal line formed on a substrate to a second signal line or electrically disconnecting said first signal line from said second signal line, said second signal line being formed on said substrate and having an end spaced away from an end of said first signal line by a certain gap,

said micro-machine switch comprising:

a supporter formed on said substrate and having a predetermined height relative to a surface of said substrate;

a flexible beam projecting from said supporter in parallel with a surface of said substrate, and having a distal end facing said gap;

a first electrical insulator making contact with a lower surface of said beam, and extending from said beam in a direction in which said beam extends;

a contact electrode formed on a surface of said first electrical insulator facing said substrate such that said contact electrode faces said gap;

a lower electrode formed on said substrate in facing relation with a part of said beam;

an intermediate electrode formed on said first electrical insulator in facing relation with said lower electrode, and electrically connected to said beam; and

a reinforcement formed on said first electrical insulator at a side opposite to said contact electrode in alignment with said contact electrode.

148. (New) The micro-machine switch as set forth in claim 147, wherein said first electrical insulator is formed with a hole, which is filled with an electrical conductor through which said intermediate electrode and said beam.

149. (New) The micro-machine switch as set forth in claim 147, further comprising a first insulating film which at least partially covers at least one of said intermediate electrode and said lower electrode.

150. (New) The micro-machine switch as set forth in claim 147, further comprising a second insulating film which at least partially covers at least one of said contact electrode and said first and second signal lines.

151. (New) The micro-machine switch as set forth in claim 149, wherein said first insulating film at least

partially covers said intermediate electrode, and a sum of thicknesses of said intermediate electrode and said first insulating film is smaller than a thickness of said contact electrode.

152. (New) The micro-machine switch as set forth in claim 150, wherein said second insulating film at least partially covers said contact electrode, and a sum of thicknesses of said contact electrode and said second insulating film is greater than a thickness of said intermediate electrode.

153. (New) The micro-machine switch as set forth in claim 147, wherein said lower electrode is formed on said substrate between said supporter and said gap.

154. (New) The micro-machine switch as set forth in claim 147, wherein a surface of said supporter and a surface of said beam form an obtuse angle.

155. (New) The micro-machine switch as set forth in claim 147, wherein said intermediate electrode has a thickness smaller than a thickness of said contact electrode.

156. (New) The micro-machine switch as set forth in claim 147, wherein at least one of said contact electrode and said first and second signal lines is covered with an insulating film which will make capacity connection.

157. (New) The micro-machine switch as set forth in claim 147, wherein said substrate is one of a glass substrate and a ceramic substrate.

158. (New) The micro-machine switch as set forth in claim 147, wherein said substrate is a gallium-arsenide (GaAs) substrate.

159. (New) The micro-machine switch as set forth in claim 147, wherein said intermediate electrode is electrically connected to said upper electrode, and said upper electrode is in an electrically floating condition.

160. (New) The micro-machine switch as set forth in claim 147, wherein said lower electrode is comprised of a plurality of electrodes each having the same area by which each of said electrodes faces said upper electrode.

161. (New) The micro-machine switch as set forth in claim 147, wherein said upper electrode is comprised of a plurality of electrodes each having the same area by which each of said electrodes faces said lower electrode.

162. (New) The micro-machine switch as set forth in claim 147, wherein said lower electrode is comprised of a plurality of electrodes each having the same area by which each of said electrodes faces said upper electrode, and said upper electrode is comprised of a plurality of electrodes each having the same area by which each of said electrodes faces said lower electrode.

163. (New) The micro-machine switch as set forth in claim 160, wherein each of said upper and lower electrodes comprised of a plurality of said electrodes defines a comb-shaped electrode.

164. (New) The micro-machine switch as set forth in claim 147, wherein said supporter and said beam are covered at their surfaces with an insulating film.

165. (New) The micro-machine switch as set forth in claim 147, wherein said beam is composed of silicon, and said

insulating film is comprised of a film formed due to oxidation of a surface of said beam.

166. (New) The micro-machine switch as set forth in claim 147, wherein a thickness of said insulating film on an upper surface of said beam is equal to a thickness of said insulating film on a lower surface of said beam.

167. (New) The micro-machine switch as set forth in claim 147, wherein said beam has a super-lattice structure having a multi-layered structure composed of two or more materials.

168. (New) A phased-array antenna comprising at least one phase shifter including a micro-machine switch for each of bits,

said micro-machine switch electrically connecting a first signal line formed on a substrate to a second signal line or electrically disconnecting said first signal line from said second signal line, said second signal line being formed on said substrate and having an end spaced away from an end of said first signal line by a certain gap,

said micro-machine switch comprising:

a supporter formed on said substrate and having a predetermined height relative to a surface of said substrate;

a flexible beam projecting from said supporter in parallel with a surface of said substrate, and having a distal end facing said gap;

a contact electrode formed on a surface of said beam facing said substrate such that said contact electrode faces said gap;

a lower electrode formed on said substrate in facing relation with a part of said beam; and

an intermediate electrode formed on said beam in facing relation with said lower electrode.

169. (New) A phased-array antenna comprising at least one phase shifter including a micro-machine switch for each of bits,

said micro-machine switch electrically connecting a first signal line formed on a substrate to a second signal line or electrically disconnecting said first signal line from said second signal line, said second signal line being formed on said substrate and having an end spaced away from an end of said first signal line by a certain gap,

said micro-machine switch comprising:

a supporter formed on said substrate and having a predetermined height relative to a surface of said substrate;

a flexible beam projecting from said supporter in parallel with a surface of said substrate, and having a distal end facing said gap;

an electrical insulator making contact with a lower surface of said beam, and extending from said beam in a direction in which said beam extends;

a contact electrode formed on a surface of said electrical insulator facing said substrate such that said contact electrode faces said gap;

a lower electrode formed on said substrate in facing relation with a part of said beam;

an intermediate electrode formed on said electrical insulator in facing relation with said lower electrode; and

a reinforcement formed on said electrical insulator at a side opposite to said contact electrode in alignment with said contact electrode.

170. (New) A phased-array antenna comprising at least one phase shifter including a micro-machine switch for each of bits,

said micro-machine switch electrically connecting a first signal line formed on a substrate to a second signal line or electrically disconnecting said first signal line from said second signal line, said second signal line being formed on said substrate and having an end spaced away from an end of said first signal line by a certain gap,

said micro-machine switch comprising:

a supporter formed on said substrate and having a predetermined height relative to a surface of said substrate;

a flexible beam projecting from said supporter in parallel with a surface of said substrate, and having a distal end facing said gap;

a first electrical insulator having a bottom in a plane in which a bottom of said beam exists, and extending from said beam in a direction in which said beam extends;

a contact electrode formed on a surface of said first electrical insulator facing said substrate such that said contact electrode faces said gap;

a lower electrode formed on said substrate in facing relation with a part of said beam;

an intermediate electrode formed on said beam in facing relation with said lower electrode; and

a reinforcement formed on said first electrical insulator at a side opposite to said contact electrode in alignment with said contact electrode.

171. (New) A phased-array antenna comprising at least one phase shifter including a micro-machine switch for each of bits,

said micro-machine switch electrically connecting a first signal line formed on a substrate to a second signal line or electrically disconnecting said first signal line from said second signal line, said second signal line being formed on said substrate and having an end spaced away from an end of said first signal line by a certain gap,

said micro-machine switch comprising:

a supporter formed on said substrate and having a predetermined height relative to a surface of said substrate;

a flexible beam projecting from said supporter in parallel with a surface of said substrate, and having a distal end facing said gap;

a first electrical insulator making contact with a lower surface of said beam, and extending from said beam in a direction in which said beam extends;

a contact electrode formed on a surface of said first electrical insulator facing said substrate such that said contact electrode faces said gap;

a lower electrode formed on said substrate in facing relation with a part of said beam;

an intermediate electrode formed on said first electrical insulator in facing relation with said lower electrode, and electrically connected to said beam; and

a reinforcement formed on said first electrical insulator at a side opposite to said contact electrode in alignment with said contact electrode.

172. (New) A phased-array antenna comprising:

M antennas (M is an integer equal to or greater than 2);

a data distributing circuit;

M data latching circuits each electrically connected to said data distributing circuit;

M N-bit phase-shifters each electrically connected to both an associated data latching circuit and an associated antenna (N is a positive integer);

a power feeder which feeds electric power to each of said phase-shifters; and

a controller electrically connected to each of said data latching circuits and said data distributing circuit,

each of said phase-shifters includes a micro-machine switch for each of bits,

each of said data latching circuits is electrically connected to said micro-
machine switch of the associated phase-shifter,

said controller calculates with N-bit accuracy a degree of phase-shifting optimal for directing a radiated beam towards a desired direction, based on predetermined location and frequency of said antenna, and transmits the calculation result to each of said data latching circuits through said data distributing circuit,

each of said phase-shifters applies a drive voltage to a micro-machine switch associated with a bit required by each of said phase-shifters, determines a degree of phase-shifting of each of said phase-shifters, alters a phase of a radio-frequency signal in accordance with the thus determined degree of phase-shifting, and supplies electric power to each of antennas,

said micro-machine switch electrically connecting a first signal line formed on a substrate to a second signal line or electrically disconnecting said first signal line from said second signal line, said second signal line being formed

on said substrate and having an end spaced away from an end of said first signal line by a certain gap,

said micro-machine switch comprising:

a supporter formed on said substrate and having a predetermined height relative to a surface of said substrate;

a flexible beam projecting from said supporter in parallel with a surface of said substrate, and having a distal end facing said gap;

a contact electrode formed on a surface of said beam facing said substrate such that said contact electrode faces said gap;

a lower electrode formed on said substrate in facing relation with a part of said beam; and

an intermediate electrode formed on said beam in facing relation with said lower electrode.

173. (New) A phased-array antenna comprising:

M antennas (M is an integer equal to or greater than 2);

a data distributing circuit;

M data latching circuits each electrically connected to said data distributing circuit;

M N-bit phase-shifters each electrically connected to both an associated data latching circuit and an associated antenna (N is a positive integer);

a power feeder which feeds electric power to each of said phase-shifters; and

a controller electrically connected to each of said data latching circuits and said data distributing circuit,

each of said phase-shifters includes a micro-machine switch for each of bits,

each of said data latching circuits is electrically connected to said micro-machine switch of the associated phase-shifter,

said controller calculates with N-bit accuracy a degree of phase-shifting optimal for directing a radiated beam towards a desired direction, based on predetermined location and frequency of said antenna, and transmits the calculation result to each of said data latching circuits through said data distributing circuit,

each of said phase-shifters applies a drive voltage to a micro-machine switch associated with a bit required by each of said phase-shifters, determines a degree of phase-shifting of each of said phase-shifters, alters a phase of a radio-frequency signal in accordance with the thus determined

degree of phase-shifting, and supplies electric power to each of antennas,

said micro-machine switch electrically connecting a first signal line formed on a substrate to a second signal line or electrically disconnecting said first signal line from said second signal line, said second signal line being formed on said substrate and having an end spaced away from an end of said first signal line by a certain gap,

said micro-machine switch comprising:

a supporter formed on said substrate and having a predetermined height relative to a surface of said substrate;

a flexible beam projecting from said supporter in parallel with a surface of said substrate, and having a distal end facing said gap;

an electrical insulator making contact with a lower surface of said beam, and extending from said beam in a direction in which said beam extends;

a contact electrode formed on a surface of said electrical insulator facing said substrate such that said contact electrode faces said gap;

a lower electrode formed on said substrate in facing relation with a part of said beam;

an intermediate electrode formed on said electrical insulator in facing relation with said lower electrode; and

a reinforcement formed on said electrical insulator at a side opposite to said contact electrode in alignment with said contact electrode.

174. (New) A phased-array antenna comprising:

M antennas (M is an integer equal to or greater than 2);

a data distributing circuit;

M data latching circuits each electrically connected to said data distributing circuit;

M N-bit phase-shifters each electrically connected to both an associated data latching circuit and an associated antenna (N is a positive integer);

a power feeder which feeds electric power to each of said phase-shifters; and

a controller electrically connected to each of said data latching circuits and said data distributing circuit,

each of said phase-shifters includes a micro-machine switch for each of bits,

each of said data latching circuits is electrically connected to said micro-machine switch of the associated phase-shifter,

said controller calculates with N-bit accuracy a degree of phase-shifting optimal for directing a radiated beam

towards a desired direction, based on predetermined location and frequency of said antenna, and transmits the calculation result to each of said data latching circuits through said data distributing circuit,

each of said phase-shifters applies a drive voltage to a micro-machine switch associated with a bit required by each of said phase-shifters, determines a degree of phase-shifting of each of said phase-shifters, alters a phase of a radio-frequency signal in accordance with the thus determined degree of phase-shifting, and supplies electric power to each of antennas,

said micro-machine switch electrically connecting a first signal line formed on a substrate to a second signal line or electrically disconnecting said first signal line from said second signal line, said second signal line being formed on said substrate and having an end spaced away from an end of said first signal line by a certain gap,

said micro-machine switch comprising:

a supporter formed on said substrate and having a predetermined height relative to a surface of said substrate;

a flexible beam projecting from said supporter in parallel with a surface of said substrate, and having a distal end facing said gap;

a first electrical insulator having a bottom in a plane in which a bottom of said beam exists, and extending from said beam in a direction in which said beam extends;

a contact electrode formed on a surface of said first electrical insulator facing said substrate such that said contact electrode faces said gap;

a lower electrode formed on said substrate in facing relation with a part of said beam;

an intermediate electrode formed on said beam in facing relation with said lower electrode; and

a reinforcement formed on said first electrical insulator at a side opposite to said contact electrode in alignment with said contact electrode.

175. (New) A phased-array antenna comprising:

M antennas (M is an integer equal to or greater than 2);

a data distributing circuit;

M data latching circuits each electrically connected to said data distributing circuit;

M N-bit phase-shifters each electrically connected to both an associated data latching circuit and an associated antenna (N is a positive integer);

a power feeder which feeds electric power to each of said phase-shifters; and

a controller electrically connected to each of said data latching circuits and said data distributing circuit,

each of said phase-shifters includes a micro-machine switch for each of bits,

each of said data latching circuits is electrically connected to said micro-machine switch of the associated phase-shifter,

said controller calculates with N-bit accuracy a degree of phase-shifting optimal for directing a radiated beam towards a desired direction, based on predetermined location and frequency of said antenna, and transmits the calculation result to each of said data latching circuits through said data distributing circuit,

each of said phase-shifters applies a drive voltage to a micro-machine switch associated with a bit required by each of said phase-shifters, determines a degree of phase-shifting of each of said phase-shifters, alters a phase of a radio-frequency signal in accordance with the thus determined degree of phase-shifting, and supplies electric power to each of antennas,

said micro-machine switch electrically connecting a first signal line formed on a substrate to a second signal

line or electrically disconnecting said first signal line from said second signal line, said second signal line being formed on said substrate and having an end spaced away from an end of said first signal line by a certain gap,

said micro-machine switch comprising:

a supporter formed on said substrate and having a predetermined height relative to a surface of said substrate;

a flexible beam projecting from said supporter in parallel with a surface of said substrate, and having a distal end facing said gap;

a first electrical insulator making contact with a lower surface of said beam, and extending from said beam in a direction in which said beam extends;

a contact electrode formed on a surface of said first electrical insulator facing said substrate such that said contact electrode faces said gap;

a lower electrode formed on said substrate in facing relation with a part of said beam;

an intermediate electrode formed on said first electrical insulator in facing relation with said lower electrode, and electrically connected to said beam; and

a reinforcement formed on said first electrical insulator at a side opposite to said contact electrode in alignment with said contact electrode.

176. (New) A method of fabricating a micro-machine switch, comprising the steps of:

etching a substrate at areas except a first area to thereby turn said first area into a raised portion;

diffusing impurities into said first area and a second area of said substrate, which second area is a different area from said first area;

diffusing impurities into a third area which connects said first and second areas to each other;

forming an electrical insulator on said second area;

forming first and second electrodes on said electrical insulator above said second area;

forming a third electrode and a pair of signal lines on a second substrate;

adhering an upper surface of said first area of said substrate onto said second substrate such that said first electrode faces said pair of signal lines and said second electrode faces said third electrode; and

removing areas of said substrate except area into which impurities have been diffused.

177. (New) The method as set forth in claim 176, wherein said substrate is composed of silicon, said second

substrate is composed of glass, and said substrate and said second substrate are electrostatically coupled to each other.

178. (New) The method as set forth in claim 176, wherein said second substrate is composed of one of ceramic and gallium-arsenide (GaAs), and said substrate and said second substrate are adhered to each other through an adhesive.

179. (New) The method as set forth in claim 176, wherein said second substrate is composed of one of ceramics and gallium-arsenide (GaAs), and further comprising the step of forming a thin glass film on said second substrate, said substrate and said second substrate being electrostatically coupled to each other.

180. (New) The method as set forth in claim 176, wherein said step of removing areas of said substrate includes the step of dipping said substrate into an etching solution having a characteristic of selecting a concentration of said impurities, to thereby solve areas into which said impurities have not been diffused.

181. (New) A method of fabricating a micro-machine switch, comprising the steps of:

etching a substrate at areas except first and second areas to thereby turn said first and second areas into raised portions;

diffusing impurities into said first area, said second area, and a third area of said substrate located between said first and second areas;

diffusing impurities into both a fourth area which connects said first and third areas to each other, and a fifth area which connects said second and third areas to each other;

forming an electrical insulator on said third area;

forming first and second electrodes on said electrical insulator above said third area;

forming a third electrode and a pair of signal lines on a second substrate;

adhering upper surfaces of said first and second areas of said substrate onto said second substrate such that said first electrode faces said pair of signal lines and said second electrode faces said third electrode; and

removing areas of said substrate except area into which impurities have been diffused.

182. (New) The method as set forth in claim 181, wherein said substrate is composed of silicon, said second substrate is composed of glass, and said substrate and said second substrate are electrostatically coupled to each other.

183. (New) The method as set forth in claim 181, wherein said second substrate is composed of one of ceramic and gallium-arsenide (GaAs), and said substrate and said second substrate are adhered to each other through an adhesive.

184. (New) The method as set forth in claim 181, wherein said second substrate is composed of one of ceramics and gallium-arsenide (GaAs), and further comprising the step of forming a thin glass film on said second substrate, said substrate and said second substrate being electrostatically coupled to each other.

185. (New) The method as set forth in claim 181, wherein said step of removing areas of said substrate includes the step of dipping said substrate into an etching solution having a characteristic of selecting a concentration of said impurities, to thereby solve areas into which said impurities have not been diffused.

186. (New) A method of fabricating a micro-machine switch, comprising the steps of:

etching a substrate at areas except a first area to thereby turn said first area into a raised portion;

diffusing impurities into said first area, a third area, and a second area located between said first and second areas;

diffusing impurities into a fourth area which connects said first and second areas to each other;

forming an electrical insulator across said second and third areas on said substrate;

forming a first electrode on said electrical insulator above said third area, and further forming a second electrode on said electrical insulator above said second area;

forming a third electrode and a pair of signal lines on a second substrate;

adhering an upper surface of said first area of said substrate onto said second substrate such that said first electrode faces said pair of signal lines and said second electrode faces said third electrode; and

removing areas of said substrate except area into which impurities have been diffused.

187. (New) The method as set forth in claim 186, further comprising the steps of:

forming a through-hole through said electrical insulator such that said through-hole reaches said second area; and

filling said through-hole with an electrical conductor such that said second electrode is electrically connected to said second area through said electrical conductor.

188. (New) The method as set forth in claim 186, further comprising the step of covering said first and second electrodes with an electrical insulator.

189. (New) The method as set forth in claim 186, wherein said substrate is composed of silicon, said second substrate is composed of glass, and said substrate and said second substrate are electrostatically coupled to each other.

190. (New) The method as set forth in claim 186, wherein said second substrate is composed of one of ceramic and gallium-arsenide (GaAs), and said substrate and said second substrate are adhered to each other through an adhesive.

191. (New) The method as set forth in claim 186, wherein said second substrate is composed of one of ceramics and gallium-arsenide (GaAs), and further comprising the step of forming a thin glass film on said second substrate, said substrate and said second substrate being electrostatically coupled to each other.

192. (New) The method as set forth in claim 186, wherein said step of removing areas of said substrate includes the step of dipping said substrate into an etching solution having a characteristic of selecting a concentration of said impurities, to thereby solve areas into which said impurities have not been diffused.

193. (New) A method of fabricating a micro-machine switch, comprising the steps of:

etching a substrate at areas except first and second areas to thereby turn said first and second areas into raised portions;

diffusing impurities into said first area, said second area, a third area located between said first and second areas, a fourth area located between said second and

third areas, and a fifth area located between said second and fourth areas;

diffusing impurities into both a sixth area which connects said first and third areas to each other, and a seventh area which connects said second and fifth areas to each other;

forming an electrical insulator extending across said third and fifth areas on said substrate;

forming a first electrode on said electrical insulator above said third area, forming a second electrode on said electrical insulator above said fourth area, and further forming a third electrode on said electrical insulator above said fifth area;

forming a fourth electrode, a fifth substrate and a pair of signal lines on a second substrate;

adhering upper surfaces of said first and second areas of said substrate onto said second substrate such that said second electrode faces said pair of signal lines, said first electrode faces said fourth electrode, and said third electrode faces said fifth electrode; and

removing areas of said substrate except area into which impurities have been diffused.

194. (New) The method as set forth in claim 193, further comprising the steps of:

forming first and second through-holes through said electrical insulator such that said first through-hole reaches said third area and said second through-hole reaches said fourth area; and

filling said first and second through-holes with an electrical conductor such that said first electrode is electrically connected to said third area through said electrical conductor and said second electrode is electrically connected to said fourth area through said electrical conductor.

195. (New) The method as set forth in claim 194, further comprising the step of covering said first, second and third electrodes with an electrical insulator.

196. (New) The method as set forth in claim 194, wherein said substrate is composed of silicon, said second substrate is composed of glass, and said substrate and said second substrate are electrostatically coupled to each other.

197. (New) The method as set forth in claim 194, wherein said second substrate is composed of one of ceramic

and gallium-arsenide (GaAs), and said substrate and said second substrate are adhered to each other through an adhesive.

198. (New) The method as set forth in claim 194, wherein said second substrate is composed of one of ceramics and gallium-arsenide (GaAs), and further comprising the step of forming a thin glass film on said second substrate, said substrate and said second substrate being electrostatically coupled to each other.

199. (New) The method as set forth in claim 194, wherein said step of removing areas of said substrate includes the step of dipping said substrate into an etching solution having a characteristic of selecting a concentration of said impurities, to thereby solve areas into which said impurities have not been diffused.

200. (New) A method of fabricating a micro-machine switch, comprising the steps of:

etching a substrate at areas except a first area to thereby turn said first area into a raised portion;

diffusing impurities into said first area, a third area, and a second area located between said first and second areas;

diffusing impurities into a fourth area which connects said first and second areas to each other;

etching said substrate in a fifth area connecting said second and third areas to each other to thereby form a recess in said fifth area;

filling said recess with an electrical insulator;

forming an electrical insulator on said second area;

forming a first electrode on said electrical insulator above said third area, and further forming a second electrode on said electrical insulator above said second area;

forming a third electrode and a pair of signal lines on a second substrate;

adhering an upper surface of said first area of said substrate onto said second substrate such that said first electrode faces said pair of signal lines and said second electrode faces said third electrode; and

removing areas of said substrate except area into which impurities have been diffused.

201. (New) The method as set forth in claim 200, wherein said substrate is composed of silicon, said second

substrate is composed of glass, and said substrate and said second substrate are electrostatically coupled to each other.

202. (New) The method as set forth in claim 200, wherein said second substrate is composed of one of ceramic and gallium-arsenide (GaAs), and said substrate and said second substrate are adhered to each other through an adhesive.

203. (New) The method as set forth in claim 200, wherein said second substrate is composed of one of ceramics and gallium-arsenide (GaAs), and further comprising the step of forming a thin glass film on said second substrate, said substrate and said second substrate being electrostatically coupled to each other.

204. (New) The method as set forth in claim 200, wherein said step of removing areas of said substrate includes the step of dipping said substrate into an etching solution having a characteristic of selecting a concentration of said impurities, to thereby solve areas into which said impurities have not been diffused.

205. (New) A method of fabricating a micro-machine switch, comprising the steps of:

etching a substrate at areas except first and second areas to thereby turn said first and second areas into raised portions;

diffusing impurities into said first and second areas, a third area located between said first and second areas, a fourth area located between said second and third areas, and a fifth area located between said third and fourth areas;

diffusing impurities into both a sixth area which connects said first and third areas to each other a seventh area which connects said second and fourth areas to each other;

etching said substrate in an eighth area connecting said third and fourth areas to each other to thereby form a recess in said eighth area;

filling said recess with an electrical insulator;

forming a first electrical insulator on said third area, and further forming a second electrical insulator on said fourth area;

forming a first electrode on said electrical insulator above said fifth area, forming a second electrode on said first electrical insulator above said third area, and

further forming a third electrode on said second electrical insulator above said fourth area;

forming a fifth electrode and a pair of signal lines on a second substrate;

adhering upper surfaces of said first and second areas of said substrate onto said second substrate such that said first electrode faces said pair of signal lines, said second electrode faces said fourth electrode, and said third electrode faces said fifth electrode; and

removing areas of said substrate except area into which impurities have been diffused.

206. (New) The method as set forth in claim 205, wherein said substrate is composed of silicon, said second substrate is composed of glass, and said substrate and said second substrate are electrostatically coupled to each other.

207. (New) The method as set forth in claim 205, wherein said second substrate is composed of one of ceramic and gallium-arsenide (GaAs), and said substrate and said second substrate are adhered to each other through an adhesive.